MODIS Technical Team Meeting
Thursday, May 3, 2001
3:00 PM

Vince Salomonson chaired the meeting. Present were Steve Kempler, Wayne Esaias, Chris Justice, Eric Vermote, Skip Reber, Mike Roberto, Jack Xiong, Bill Barnes, Sol Broder, Michael King, and Barbara Conboy, with Rebecca Lindsey taking the minutes.

1.0 Schedule of Upcoming Events

*   Terra Cloud Mask Conference   May 8-9, 2001
    University of Wisconsin-Madison

*   Ocean Color Science Meeting   May 22-24, 2001
    San Diego, CA

2.0 Meeting Minutes

2.1 General discussion

Salomonson asked the team whether anyone had thought about Claire Parkinson's request for MODIS contributions for a special issue of IEEE Transactions on Geoscience and Remote Sensing for Aqua. Esaias indicated that he would be preparing an article on the expected benefits for ocean science from a combined Terra/Aqua mission, and Salomonson indicated he would ask around to see if there were others who would be interested (e.g., Wan and Running).

With respect to the results symposium, Salomonson is helping Jon Ranson send out an email about a joint-instrument, Terra results symposium in the first week of January. If the other instruments don't want to participate, we'll go it alone. A venue in the southern U.S. latitudes will be sought.

Salomonson also reported that Jon Ranson has indicated he wants to go forward with an advocacy for the deep space maneuver, and that there will be a meeting at 9:00 am Tuesday morning. Salomonson suggested that some draft charts from Esaias, Xiong, and Barnes be developed showing an error budget. Esaias thought that something similar already existed, and Xiong and Barnes thought that a paper by Bruce Guenther had updated material. Esaias also indicated he had asked Otis Brown to capture his concerns as well.

Salomonson next raised the issue of data ordering and the EDG. Per discussion at the PIP meeting about difficulties with the system, Salomonson had read Graham Bothwell's report, and he felt that it does address some of the

important issues. Salomonson's impression, however, is that there is a large segment of the user community that is uncomfortable with HDF-EOS format to the point that they just won't use MODIS data if they have to learn about or adopt it. They don't want training on how to use HDF-EOS; they want alternatives, such as flat binary. For example, he has been made aware of comments from users that if they have to choose between AVHRR data, which is not as good as MODIS data, but is available in a flat binary format, and MODIS data, they would take AVHRR rather than go through the effort of learning HDF-EOS.

Kempler acknowledged there is a steep learning curve associated with the format, and that some users are put off by it, but he felt that many users do come to like the format after they grow familiar with it.

Reber indicated that he has been looking into what is involved in getting HDF-EOS translated into flat binary. As far as offering more projection tools, they need some more options to work from, especially for the Land team, and would like something in writing. Justice reminded the group that there had been discussion about having a data workshop, where we researched various data tools, and then decided on how to do outreach on those tools.

Salomonson reiterated that he feels that this is a crucial point for MODIS data availability in the user community and that if we do not quickly respond to the issue of usability and become more user-friendly, we run the risk of users going away and never coming back.

Kempler indicated that with respect to flat binary, they have been looking at whether there are volumes problems. It is easy to convert a small amount of data like at NSIDC, but not so easy, perhaps, to do the large volumes of the other DAACs. Also, they must figure out how to put metadata in the flat binary. One suggestion is that the science team could write out binary files in their algorithms. Esaias indicated Oceans already does this.

Esaias raised the issue of a new version (version 5) of HDF-EOS, and whether it would be backward compatible. Reber reported that there would be a new version, and unfortunately, it would not be backward compatible. However, ESDIS will continue to support both formats for a time. Esaias said that MODIS' data processing efficiency would improve dramatically if we processed data in flat binary, and then converted it to HDF-EOS at the end.

2.2 Instrument Update

Roberto reported that replacement door latches on the space view door have been installed on Aqua MODIS, and also that the Solar Diffuser Stability Monitor (SDSM) spare screen tests should be complete in one or two weeks. Additionally, a SDSM screen test is being planned for the FM1 MODIS. This non-invasive test could occur after spacecraft level thermal vacuum testing. The plan is that after the first part of the test, Raytheon/SBRS will stop if everything looks fine. However, if a change is needed, they will consult with Goddard personnel

regarding screen replacement. Any change in the flight SDSM screen will have been preceded by a demonstration of the effectiveness of the change using non-flight hardware. Roberto reminded the group that before the PFM MODIS launch, Raytheon/SBRS had cut the SDSM screen out and replaced it.

Xiong asked that MCST get a copy of the results of the screen tests when they come in because their tests indicate that the problem may be the SDSM itself, and not just the screen, as they see a "tilt" much larger than that reported by SBRS.

Roberto also reported that the failed door latches are now in the materials lab at Goddard, and there has been an agreement between Goddard and Raytheon/SBRS to replace the outer shell and bearings on the nadir aperture door failsafe without taking it completely apart.

2.3 GES DAAC Update

Kempler reported that production is going well. They were down on May 3rd for an upgrade that will allow them to distribute on multi-media, e.g., DVD. They are basically caught up with EDOS, and downtime is manageable.

Kempler had looked into a concern raised by Bill Ridgway at the previous day's PIP meeting, which is that he still encounters about a 50% failure rate on his EDG orders. They have been as yet unable to verify that the EDG is solely responsible. It could be hardware problems on either end, and he is asking for a lot of data, which increases the likelihood of failure.

A main concern is that he gets the same generic error message for all the failures, which means that they cannot categorize them and determine where the problem(s) are. Kempler provided Reber several printouts of the messages Ridgway has received when his orders fail. The group discussed how user complaints are handled, and Kempler indicated that DAAC user services is the first step. User services then passes the ticket up the line to the appropriate people, and continues to track the ticket and inform the user. Barnes asked if the DAAC was keeping statistics on failures versus size of order, and Kempler indicated they were beginning to do that.

The group discussed a suggestion Salomonson had heard from Lorraine Remer that we have a few days of testing the consistent-year algorithms before we keep going forward with production. Justice said people would be doing that at as matter of course during the first week or so. Barnes indicated that we might as well keep going forward rather than stop to check because if you stop, you will definitely lose processing time, but if you keep going forward and there are no problems, you don't lose time.

2.4 Land Update

Justice reminded Broder that at the MODIS Science Team Meeting, Jeff Morisette had requested several validation granules and has not received them.

Also he reported that the rapid response system is up and running, and it had received some attention on CNN. He indicated that Jacques Descloitres would give a presentation next week.

Vermote reminded the group about the upcoming Cloud Mask conference next week in Wisconsin.

2.5 Ocean Update

Esaias reported that they and the Montana folks had a productive meeting with DAO about their new products, and that DAO said they would be able to support our consistent year with their products. He also reported that when the Oceans products move to provisional status with the new collection, they will be providing product quality summaries, which they are preparing now.

2.6 Atmosphere Update

King reported that the atmosphere team is working on its consistent-year code delivery, and that everything is ready except one PGE flag, which should be done today (May 3rd). All the known physics errors have now been corrected, as well as known omissions to the at-launch code, which have now been incorporated, so he feels the quality of the data products is very good.

2.7 MCST

Barnes showed viewgraphs of MCST's response degradation model. The charts showed gain changes from days 84 to 475. At this point they can't tell if a straight line or a quadratic is more appropriate, but their decision is to use the straight line model for degradation corrections and then continue to check it over time.

With the ocean bands, we at first thought the minor variations were a screen issue, but we are seeing the problem in bands without screen, too. We may be getting a seasonal change in the bi-directional reflectance function term that we haven't fully corrected for. Xiong indicated that they would be looking at SRCA data as a separate calibrator.

Esaias asked if he was interpreting the chart correctly, and that at the end of two years they anticipate that Band 8 will have lost 10%, but Band 16 will have gained 4% percent. Barnes said that was true.

Justice asked if there were implications for Aqua, and Barnes said he did not think so. They would just monitor it closely.

2.8 MAST Update

Conboy reported that sometime during the last three weeks of September is when folks seem to be available for the MODIS Science Team Meeting. Salomonson suggested arranging a three-day meeting.

2.9 Conclusion

Salomonson asked if there was any word on detectors on Aqua, and Roberto said no new information is likely until after thermal vacuum testing.

Salomonson also reported that there was an orbital issue with respect to Terra and SAC-C. SAC-C is drifting toward 10:15, and there will come a time when it and Terra will be getting rather close to each other. The Project/Operations people want to know if it's OK with MODIS to let Terra continue to drift toward 10:15, which will avoid the possibility of any close encounter problems. Subsequent discussion with Esaias has indicated that drifting to 10:15 A.M. (no earlier) is OK, and Salomonson will so notify the Project.

3.0 Action Items

3.1 Discipline leads to meet to resolve the issue of beta-release code and science-quality code, and what we need to say about it.
Status: Open.
3.2 Technical team to discuss further the issue of predicted ephemeris data and how to improve it.
Status: Open.
3.3 Masuoka to give Murphy an update on product releases.
Status: Closed.